

## The formation of information competence of future specialists – as a factor of improvement of quality of preparation

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**Abstract:** The formation of information competence of future specialists – as a factor of improvement of quality of preparation. In conditions of reforming of the Kazakh education and accession of the Republic of Kazakhstan to the Bologna process in the International Kazakh-Turkish University named after Kh .A. Yassawi for the training of specialists of international level and improve the quality of education the main course is taken on the application of a competence approach in training, because it enhances the practical orientation of education, its pragmatic, subject-professional aspect. Theoretical and practical significance of identified and justified set of organizational-pedagogical, psychological and pedagogical conditions conducive to the efficiency of development of information competence of future specialists of technology; and validates the components of informational competence in the process of professional-pedagogical training of future specialists and developed the system of exercises and activities designed for classroom and independent works in communicative nature. The analysis of the research showed the effectiveness and necessity of application of information technologies in formation of information competence of future specialists of technology in the educational process for the solution of educational tasks, and creating specialist with creative thinking, capable to function effectively in the changing conditions of professional activity. This article discusses the dynamics of the formation of information competencies, its structure, levels, stages and methods.

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### 1. Introduction

The actuality of the research is to review the process of development of information competence of future specialists as one of the structural components of professional competence, there is necessity to search for modern methods and measures of education, application of innovative technologies in professional training of students.

Thus, information competence of future specialists is inherently a necessary component of pedagogical activity in general. That causes the necessity to form such a personality who can select the necessary information, organize, learn it in high level, is oriented in a growing information flow and ready to upgrade knowledge throughout the life.

Entry into the information society has fundamentally new requirements to the system of education, the level of graduates' preparation, their professional competences, the most important of which is informational competence.

The dictionary sources [1, 2, 3] give the definitions of the terms «competent», «competence», «competence».

In a modern paradigm of education based on the competence approach, the term «competence» is

used to denote the integrated characteristics of the quality of training of the graduates. As Professor V.I. Baydenko notes [4] «competence is the new type of goal-setting».

### 2. Methods of research

The analysis of the research showed the effectiveness and necessity of application of information technologies in forming information competence of future specialists in the educational process in order to settle educational tasks, and educate specialists with creative thinking, capable to function effectively in the changing conditions of professional activity.

The hypothesis of research. Information competence of future specialists is a part of professional competence of the specialist and it is formed in the process of professional-pedagogical training at the University. The effectiveness of the development of information competence of future specialists can be provided in the university if:

- the information component is a part of professional preparation of future specialists; the process of formation of information competence is built incrementally providing students to master the relevant technologies necessary for the future

specialist, accumulation of experience and information manifestations; the necessary organizational-pedagogical conditions of development of information competence of future specialists in conditions of the University have been created.

In accordance with the purpose and hypothesis the following research objectives were put:

- to reveal the nature and contents of development of information competence of future specialists using information and content-technological methods;

- to reveal the content-technological support of the process of forming information competence of future specialists;

- to identify organizational-and-pedagogical conditions of realization of the process of formation of information competence of future specialists in conditions of higher education institutions.

In order to solve the set of tasks the following methods of research were used: theoretical analysis and synthesis, generalization and classification, modeling and design, and others; empirical: observation, interview, questionnaire, testing, analysis of the results of activities of students, the pedagogical experiment, methods for assessing the effectiveness of the educational process and others.

Theoretical and practical significance: it has been revealed and justified the set of organizational-pedagogical, psychological and pedagogical conditions conducive to the efficiency of development of information competence of future specialists; determined and justifies the components of informational competence in the process of professional-pedagogical training of future specialists and developed the system of exercises and activities devoted to lessons and individual works in communicative nature.

General scientific: analytical (the analysis of the scientific literature on psychology, pedagogy on the research; analysis of textbooks for learning technology); social-pedagogical: monitoring and compilation of material on the professional-pedagogical training of future specialists; questionnaire survey and testing; experimental methods: conducting of experiential learning, pedagogical experiment, statistical data processing.

### 3. The main part

Competent – is the severity of a competence of the particular person, a measure of its mastering. According to J.Raven [5] competence is a specific ability needed to effectively act in a certain subject sphere and includes a tight circus of knowledge, subject skills, and ways of thinking and understanding of responsibility for their actions. Being competent means to have the set of specific

competences of deferent levels: watch, know the subject, independently put questions, write business letters, prove his position, and manage interpersonal conflicts.

A.V. Khutorskoy constructs the relationship between the concepts as follows: competence includes a set of interrelated qualities of the person (knowledge, abilities, skills, methods of activity) asked in relation to a specific group of objects and processes, and necessary for quality productive activity in relation to them; competence - ownership, possession of a appropriate competence by a person, the competence which includes his personal attitude to it and the object of activity [6].

B. Hassan shares the concept of competence and competence in other way: «Competence is a description of the location, not individuals, i.e. it is a parameter of social roles, which personally is revealed as competence, i.e. the conformity of a person to the position «imputation», in other words, the ability to carry out activities in accordance with the social requirements and expectations. The level of competence is a characteristic of the results of educational practice for the individual. Competence is something that claim or that is assigned as a tribute to be achieved; competence - this is what a particular person has achieved of the desired or imputed» [7].

Nowadays there is a contradiction between the ever-increasing amount of substantive information and lack of optimal ways of its use in order to create the complete natural - scientific picture of the world. This requires the formation of the «informative» personality. The personality who owns the information competence and, therefore, possesses such qualities as information literacy, information style of thinking, informational behavior.

The information competence often means the ability to learn information technology, work with all kinds of information. Under the professional information and communication competence you understand the ability to solve problems of information in the professional field, using modern information resources (tools and sources) [8].

Analysis of characteristics of information competencies allows you to isolate the problem of special information training which in its turn requires radical changes in the education system, and these changes should concern all its levels.

At the first stage in the process of studying Informatics computers are the object of inquiry. The main purpose of this stage is forming initial computer literacy and elementary computing skills.

At the second stage computers get used to study other subjects, the work with the training and survey programs starts.

At the third stage of computerization covers all components of the educational system: the computer is used as a universal tool to solve various tasks. The main tools are a universal software tools, such as text editors, spreadsheets, database management systems, e-mail.

The fourth stage is connected with the development and use of means of multimedia, global,

and local databases. The aim of this stage is successfully mastering and using a new generation to solve certain tasks.

In accordance with these stages, you can construct a model of the formation of information and communication competencies in the process of educating (table 1):

**Table 1. The model of forming of information and communication competencies in the process of educating**

Computer literacy	Knowledge	Skills	Competences
Elementary computer literacy	The work of the databases. Programming fundamentals	Working with documents in as a user	The skills of work with the software product
PC is used to study other subjects	Digital educational resources, educational portals, special programs, electronic textbooks, models, tests, control and training programs	Work with teaching and controlling programs	Skills in working with digital educational resources, educational portals, special programs, electronic textbooks, models, tests, supervising and training programs
Telecommunication facilities	The knowledge of opportunities of means of communications, e-mail	E-mail, ICQ, text editors, spreadsheets, database management systems	Skills and abilities to learn new tools, find, create and issue information
Средства нового поколения New generation	The knowledge of opportunities of the equipment, the rules of work with them	Camcorders, the Internet, computers	Skills and ability to develop new generation products. Application of computer technologies in a new situation

Thus, a graduate of an educational institution must have the following information competencies:

- to be able to find ways of access to databases and tools of the information service;
- to understand different forms and ways of presenting data in verbal, graphical and numerical forms;
- to know about the existence of public information sources and be able to use them;
- to be able to evaluate and synthesize available data from different points of view, use the techniques of data analysis;
- to be able to use the available data for solving various tasks [9].

The suggested model can be applied to describe the process of formation of information competence of other levels of education as the average special so the higher, as well as for the development of programs for professional training of future specialists.

Informational competence which we consider as an integrative quality of the pool of information competencies can be presented as:

- structural model consisting of interconnected components (reflective, creative, dialogic);
- level model discriminating low, medium and high levels of its formation (on the basis of cognitive-reflexive, psychological-and-communicative, creative and emotional-volitional criteria)
- step model describing the logic of the process of its formation.

The formation of information competencies is one of the priority objectives of the methodological training system of the professional-pedagogical training of future specialists.

This methodical system is defined by professional-personal orientation of future specialists in the sphere of information and liaison, and involves a conscious motivation of information activities, efficient, creative and responsible use of information

technologies in non-standard situations, readiness for constructive cooperation and interpersonal dialogue in vocational information services [10].

Logic of the methodical system of formation of information competencies means a gradual complication of the mechanisms of interaction of a student with the information environment: from perception and comprehension of the elements of the information environment, via self-determination in professional work and professional communication in the information environment to self-development in the process of transformation of the professional information environment. Pedagogical support the continuous development of the student autonomy and his moving from a lower level of information competence to a higher level consists in the management of educational process on the basis of the model of formation of information competence of future specialists. Every indication of information competence has a certain degree of manifestation: it does not reveal at all or only very weakly; is revealed not fully; is revealed fully. In this case it is right to say about the level approach to the studied phenomenon [11].

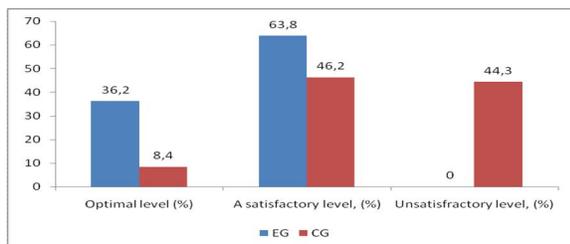
As mechanism for transferring qualitative indexes data into quantitative one in our research are the levels of formation of the different components of the information competence of future specialists elementary-source, is derivative-adaptive, creative and professional.

At this stage each student spent self-analysis on his activities, defined self-estimated professional acquisitions, the main of which was forming of information competence, which is of special importance for development of the ability to personal-professional self-determination for future specialists.

Experimental work confirms extended by us hypothesis that the effectiveness of forming of information competence of a future specialist will increase significantly, if the institution will create the necessary organizational and pedagogical conditions ensuring a gradual, consistent, purposeful implementation of the professionally oriented technologies through the use of active methods of educating with personally-oriented and socio-moral orientation, taking into account individual needs, interests, inclinations and abilities of students. (Table 2), (Figure 1).

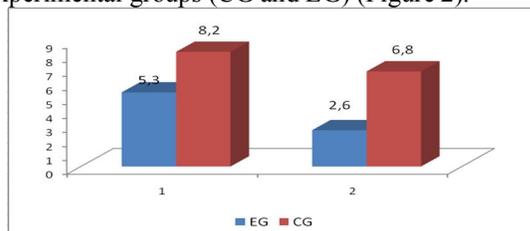
**Table 2. The results of assessment of the level of forming information competence of future specialists**

Group	Optimal level (%)	A satisfactory level, (%)	Unsatisfactory level, (%)
EG	36,2	63,8	0
CG	8,4	46,2	44,3



**Figure 1. A comparative analysis of assessment of the level of development of information competence of future specialists**

Control/comparative phase consisted in the analysis and generalization of results of the effectiveness of the training in control and experimental groups (CG and EG) (Figure 2).



**Figure 2. Results of the effectiveness of the training in control and experimental groups (CG and EG).**

Quantitative and qualitative analysis shows that all the figures in the experimental group are higher than in the control. EG students well and perfectly did the given work. They demonstrated the ability to extract the necessary information in sufficient volume and use the received information to discuss. They did not experience any trouble. As well as the group creatively solved the problems.

The results of the research showed the possibility of using of this research at a higher education institute. The affiliation between the quality of training and the level of information competence of students was revealed.

The results of the research showed that the orientation of educational disciplines on forming of information competence including the change in targeted, substantial and procedural components of the educational process helps to improve the quality of professional preparation of future specialists.

**4. Conclusion:**

1. Stages of forming of information competencies repeat the stages of Informatization and information technology development.

2. You can highlight a specific set of knowledge, skills and competences corresponding to each stage.

3. Knowledge, skills and competence expand, develop and become stronger from stage to stage.

4. The content and means of education should correspond to the stage, its objectives, as well as the level of forming of information competence of the students.

5. Forming of information competencies is possible by means of any academic disciplines.

6. Quality of professional training depends on the forming of information competencies.

Preparation of a competent specialist with a high level of general and professional culture, fundamental knowledge in the field of methodology, pedagogy, systemic vision of pedagogical problems in education is aimed at the improvement and forming of future specialists' own creative style of pedagogical activity.

Modernization of education system in Kazakhstan is connected with the fact that the results must meet the demands of the state, society, personality in conditions of economic and democratic transformations occurring in the country. Theoretical, in fact, and encyclopedic on the breadth of knowledge that had long been the main goal of the educational process should become the means. The orientation of the high school is replaced by the competence - oriented education aimed at developing the graduate readiness to effectively organize the internal (knowledge, skills, values, psychological characteristics etc) and external (informational, human, material and etc) resources for achieving the goals. The modern conditions of the society life require new approaches to the education system of future specialists. Developing of information competence of future specialists in the conditions of developing of the information environment is one of the priority directions of development of the social sphere and organically linked with the process of modernization of education, including higher education.

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